



Contribution ID: 30

Type: **Oral Presentation**

Direct dark matter search with the CRESST experiment (20' + 5')

Saturday, 6 August 2016 14:00 (25 minutes)

The quest for the particle nature of Dark Matter is one of the big open questions of modern physics. A well motivated candidate for Dark Matter is the so-called WIMP - a weakly interactive massive particle. Recently several theoretically well-motivated models with Dark Matter candidates in a mass region below the WIMP mass-scale gained also a lot of interest, theoretically and experimentally. The CRESST II experiment located at the Gran Sasso laboratory in Italy is optimised for the detection of the elastic scattering of these low mass Dark Matter particles with ordinary matter. We show the results obtained with an improved detector setup with increased radio purity and enhanced background rejection. In addition we present the result obtained with a dedicated low-threshold analysis of a single detector module. The limit obtained is the most stringent limit obtained for direct Dark Matter experiments in the mass region below $1.8 \text{ GeV}/c^2$. We will discuss the expected performance for new small CRESST-type detectors to be used during the next data taking phase. We conclude with an outlook of the future potential for direct Dark Matter detection using further improved CRESST CaWO_4 cryogenic detectors.

Primary author: SCHIECK, Jochen (Austrian Academy of Sciences (AT))

Presenter: SCHIECK, Jochen (Austrian Academy of Sciences (AT))

Session Classification: Dark Matter Detection

Track Classification: Dark Matter Detection